

WHAT IS CLAIMED IS:

1. A method for assuring a quality of service for a multimedia session including plural media data streams between a first user terminal associated with a first local access network and a second user terminal associated with a second local access network, where the first and second local networks are coupled to an IP network, comprising:

the first user terminal determining whether there are sufficient resources in the first local access network to support a quality of service requested for each of the media data streams; and furthermore that the media data streams are allowed to use the IP network via the first local access network and

the first user terminal sending a first message to the second user terminal confirming that determination;

the second user terminal determining whether there are sufficient resources in the second local access network to support a quality of service requested for each of the media data streams; and

the second user terminal sending a second message to the first user terminal confirming that determination,

wherein the sending of the first and second messages assures the requested quality of service for each media data stream in the session will be provided.

2. The method in claim 1, wherein the IP network supports the requested quality of service for each media data stream in the session, and wherein the first user terminal determines whether the media data streams can use the IP network via the first local access network and the second user terminal determines whether the media data streams can use the IP network via the second local access network.

3. The method in claim 2, wherein a differentiated services provisioning mechanism is used to deliver the requested quality of service for each media data stream in the session across the IP network.

4. The method in claim 1, wherein requested quality of service for each media data stream in the session is assured without using a resource-reservation protocol (RSVP).

5. The method in claim 1, wherein if the requested quality of service for each media data stream in the session can not be provisioned in one of the first and second local access networks, the session is not set up.

6. The method in claim 1, wherein if the requested quality of service for each media data stream in the session can not be provisioned in one of the first and second local access networks, a setup of the session is attempted with a changed quality of service condition for one or more of the media data streams in the session.

7. The method in claim 1, wherein the first user terminal determines whether there are sufficient resources in the first local access network to support a quality of service requested for each of the media data streams in a first direction from the first terminal to the second terminal and in a second direction from the second terminal to the first terminal, and

wherein the second user determines whether there are sufficient resources in the second local access network to support a quality of service requested for each of the media data streams in a first direction from the first terminal to the second terminal and in a second direction from the second terminal to the first terminal.

8. The method in claim 1, further comprising:
the second user terminal informing the first user terminal that the second user terminal lacks capabilities to send the second message for one or more of the media streams, and
the first user terminal informing the second user terminal that the first user terminal will proceed with the multimedia session without the second terminal sending the second message.

9. The method in claim 1, wherein the first and second messages are communicated using session initiation protocol (SIP) signaling.

10. The method in claim 1, wherein the first and second local access networks are mobile radio access networks and the first and second user terminals are mobile terminals, and

wherein the first and second mobile terminals determine whether there are sufficient resources in the first and second mobile radio access networks, respectively, to support a quality of service requested for each of the media data streams using a mobile radio access network quality of service reservation procedure at a radio access bearer level for each of the media data streams.

11. The method in claim 10, wherein the first and second mobile radio access networks are GPRS or UMTS networks, and

wherein the first and second mobile terminals determine whether there are sufficient resources in the first and second GPRS or UMTS networks, respectively, to support a quality of service requested for each of the media data streams using a PDP context signaling procedure.

12. A method for end-to-end resource coordination for a multimedia session including plural media data streams between a first mobile terminal associated with a first local access network and a second mobile terminal associated with a second local access network, where the first and second local networks are coupled to an IP network, comprising:

the first mobile terminal using a PDP context activation procedure to determine if sufficient resources can be provisioned in the first local access network to support a quality of service (QoS) requested for each of the media data streams in the session, and if so, sending a first QoS confirmation message to the second mobile terminal, and

the second mobile terminal using a PDP context activation procedure to determine if sufficient resources can be provisioned in the second local access network to support a quality of service (QoS) requested for each of the media data streams in the session, and if so, sending a second QoS confirmation message to the first mobile terminal.

13. The method in claim 12, wherein the first and second QoS confirmation messages confirm end-to-end provision of the requested quality of service for each media data stream in the session.

14. The method in claim 12, wherein the first and second mobile terminals provision sufficient resources to support a quality of service requested for each direction of each of the media streams.

15. The method in claim 12, further comprising:
the second mobile terminal informing the first mobile terminal that the second mobile terminal lacks capabilities to send the second message for one or more of the media streams, and

the first mobile terminal informing the second mobile terminal that the first mobile terminal will proceed with the multimedia session without the second mobile terminal sending the second message.

16. The method in claim 12, wherein the first and second local access networks are GPRS or UMTS networks.

17. The method in claim 12, wherein the IP network supports the requested quality of service for each media data stream in the session.

18. The method in claim 17, wherein a differentiated services provisioning mechanism is used to deliver the requested quality of service for each media data stream in the session across the IP network.

19. The method in claim 12, wherein requested quality of service for each media data stream in the session is assured without using a resource-reservation protocol (RSVP).

20. The method in claim 12, wherein if the requested quality of service for each media data stream in the session can not be provisioned in one of the first and second local access networks, the session is not set up.

21. The method in claim 12, wherein if the requested quality of service for each media data stream in the session can not be provisioned in one of the first and second local access networks, setup of the session is attempted with a changed condition.

22. The method in claim 21, wherein the changed condition may be applied to one or more media streams in the second local access network.

23. The method in claim 21, wherein the changed condition is a reduced quality of service for one or more of the media data streams.

24. The method in claim 12, wherein the first and second messages are communicated using session initiation protocol (SIP) signaling.

25. The method in claim 12, wherein if the requested quality of service for each media data stream in the session can not be provisioned in one of the first and second local access networks, the first mobile terminal informs the second mobile terminal that the second mobile terminal need not determine if sufficient resources can be provisioned in the second local access network, and the first and second mobile terminal complete the multimedia session setup without using QoS confirmation messages for the one or more media streams.

26. The method in claim 12, wherein if the requested quality of service for each media data stream in the session can not be provisioned in one of the first and

second local access networks, the first mobile terminal does not determine if sufficient resources can be provisioned in the first local access network and informs the second mobile terminal that the second mobile terminal not to determine if sufficient resources can be provisioned in the second local access network.

5 27. The method in claim 12, wherein if the requested quality of service for each media data stream in the session can not be provisioned in one of the first and second local access networks, the first and second mobile terminal complete the multimedia session setup without using QoS confirmation messages for the one or more media streams.

10 28. A first mobile radio terminal for determining a quality of service for a multimedia session including plural media data streams between the first mobile radio terminal associated with a first local mobile access network and a second user terminal associated with a second local access network, where the first local mobile access network and the second local network are coupled to an IP network,
15 comprising:

radio transceiving circuitry, and

electronic circuitry, coupled to the radio transceiving circuitry, configured to determine whether there are sufficient resources in the first local mobile access network to support a quality of service requested for each of the media data streams
20 and to send a confirmation message to the second user terminal confirming that determination.

25 29. The first mobile radio terminal in claim 28, wherein the electronic circuitry is configured to detect a confirmation message from the second user terminal indicating that there are sufficient resources in the second local access network.

30. The first mobile radio terminal in claim 29, wherein the confirmation message detected from the second user terminal indicates that the media data streams are allowed to use the IP network via the second local mobile access network to support a quality of service requested for each of the media data streams.

5 31. The first mobile radio terminal in claim 28, wherein the confirmation message from the first user terminal indicates that the media data streams are allowed to use the IP network via the first local mobile access network to support a quality of service requested for each of the media data streams.

10 32. The first mobile radio terminal in claim 28, wherein a differentiated services provisioning mechanism is used to deliver the requested quality of service for each media data stream in the session across the IP network.

15 33. The first mobile radio terminal in claim 28, wherein requested quality of service for each media data stream in the session is assured without using a resource-reservation protocol (RSVP).

20 34. The first mobile radio terminal in claim 28, wherein if the requested quality of service for each media data stream in the session can not be provisioned in one of the first and second local access networks, the electronic circuitry is configured to abort setup of the session.

25 35. The first mobile radio terminal in claim 28, wherein if the requested quality of service for each media data stream in the session can not be provisioned in one of the first and second local access networks, the electronic circuitry is configured to attempt to setup the session with a changed quality of service condition for one or more of the media data streams in the session.

36. The first mobile radio terminal in claim 28, wherein the electronic circuitry is configured to assure there are sufficient resources in the first local access

network to support a quality of service requested for each of the media data streams in a first direction from the first terminal to the second terminal and in a second direction from the second terminal to the first terminal.

37. The first mobile radio terminal in claim 28, wherein the electronic
5 circuitry is configured to detect a message from the second mobile terminal indicating that there are insufficient resources in the second local access network to support a quality of service requested for each of the media data streams.

38. The first mobile radio terminal in claim 37, wherein the electronic
10 circuitry is configured to inform the second mobile terminal that setup of the multimedia session will proceed even though there are insufficient resources in the second local access network to support a quality of service requested for each of the media data streams.

39. The first mobile radio terminal in claim 28, wherein the confirmation
message is communicated using session initiation protocol (SIP) signaling.

40. The first mobile radio terminal in claim 28, wherein the first and
15 second local access networks are mobile radio access networks and the second user terminal is a mobile terminal.

41. The first mobile radio terminal in claim 40, wherein the first and
20 second mobile radio access networks are GPRS or UMTS networks, and wherein the electronic circuitry is configured to assure there are sufficient resources in the first GPRS or UMTS network to support a quality of service requested for each of the media data streams using a PDP context signaling procedure.

42. A communications system providing resources for a multimedia session including plural media data streams between first and second mobile terminals, comprising:

an IP network;

a first local mobile access network coupled to the IP network;

a first mobile terminal associated with the first local mobile access network configured to use a procedure to establish a packet data connection from the first mobile terminal through the first local mobile access network and to determine if sufficient resources can be provisioned in the first local mobile access network to support a quality of service (QoS) requested for each of the media data streams in the session, and furthermore, that the media data streams are allowed to use the IP network via the first local access network, and if so, to send a first QoS confirmation message to the second mobile terminal;

a second local mobile access network coupled to the IP network; and

a second mobile terminal associated with the second local mobile access network configured to use a procedure to establish a packet data connection from the first mobile terminal through the first local mobile access network and to determine if sufficient resources can be provisioned in the second local mobile access network to support a quality of service (QoS) requested for each of the media data streams in the session, and furthermore, that the media data streams are allowed to use the IP network via the second local access network, and if so, to send a second QoS confirmation message to the first mobile terminal.

43. The communications system in claim 42, wherein a procedure to establish a packet data connection from the first mobile terminal through the first local mobile access network is a PDP context activation procedure.

44. The communications system in claim 42, wherein the first and second QoS confirmation messages confirm end-to-end provision of the requested quality of service for each media data stream in the session.

45. The communications system in claim 42, wherein the first and second
5 mobile terminals determine if there are sufficient resources in their respective local mobile access networks to support a quality of service requested for each direction of each of the media streams.

46. The communications system in claim 42, wherein the second mobile terminal is configured to inform the first mobile terminal whether there are
10 sufficient resources in the second local access network to support a quality of service requested for each of the media data streams, and

wherein if there are insufficient resources, the first mobile terminal is configured to inform the second mobile terminal that set up of the multimedia session will proceed without the second mobile terminal sending the second QoS
15 confirmation message.

47. The communications system in claim 42, wherein the IP network supports the requested quality of service for each media data stream in the session.

48. The communications system in claim 47, wherein a differentiated services provisioning mechanism is used to deliver the requested quality of service for
20 each media data stream in the session across the IP network.

49. The communications system in claim 42, wherein requested quality of service for each media data stream in the session is determined without using a resource-reservation protocol (RSVP).

50. The communications system in claim 42, wherein if the requested
25 quality of service for each media data stream in the session can not be provisioned in

one of the first and second local mobile access networks, one of the first and second mobile terminals is configured to abort set up of the session.

51. The communications system in claim 42, wherein if the requested quality of service for each media data stream in the session can not be provisioned in one of the first and second local access networks, one of the first and second mobile terminals is configured to attempt setup the session with a changed condition.

52. The communications system in claim 51, wherein the changed condition is a reduced quality of service for one or more of the media data streams.

53. The communications system in claim 51, wherein the changed condition is that the second mobile terminal is not required to determine if sufficient resources can be provisioned in the second local access network and the first and second mobile terminal complete set up of the multimedia session without using QoS confirmation messages for the one or more media streams.

54. The communications system in claim 51, wherein the changed condition is that the first mobile terminal does not determine if sufficient resources can be provisioned in the first local access network and informs the second mobile terminal that the second mobile terminal need not determine if sufficient resources can be provisioned in the second local access network for the session, the first and second mobile terminal completing setup of the multimedia session without using QoS confirmation messages for the one or more media data streams.

55. The communications system in claim 42, wherein the second mobile terminal informs the first mobile terminal that there are insufficient resources in the second local access network to support a quality of service requested for each of the media data streams, and in response, the first mobile terminal informs the second mobile terminal that the multimedia session will proceed without the second mobile terminal sending the second message for each of the media streams.

56. The communications system in claim 49, wherein the session setup, request, and first and second QoS confirmation messages are communicated using session initiation protocol (SIP) signaling.

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